What is claimed is:

1. A surface acoustic wave device comprising:

a quartz substrate;

a piezoelectric thin film disposed on the quartz substrate and having a positive temperature coefficient of delay; and

an interdigital electrode disposed in contact with the piezoelectric thin film; wherein

the quartz substrate has an angle ϕ at the Euler angle (0, ϕ, θ) which is selected such that the quartz substrate has a negative temperature coefficient of delay at a predetermined propagation direction θ, and the piezoelectric thin film has a thickness H which is selected such that a fundamental mode of a leaky surface acoustic wave is excited on the quartz substrate and the surface acoustic wave device operates using the fundamental mode of the leaky surface acoustic wave.

2. A surface acoustic wave device according to claim 1, wherein a normalized film thickness H/λ obtained by dividing the thickness H of the piezoelectric thin film by a wavelength λ of the leaky surface acoustic wave to be excited is within a range of about 0.01 to about 0.15.

3. A surface acoustic wave device according to claim 1, wherein the angle ϕ is within a range of about 119° to about 167°.

4. A surface acoustic wave device according to claim 1, wherein the angle ϕ is within a range of about 119° to about 138°.

5. A surface acoustic wave device according to claim 1, wherein the propagation direction θ is in a range of about 85° to about 95°.

6. A surface acoustic wave device according to claim 1, wherein the piezoelectric thin film is made of a material selected from the group consisting of ZnO, AlN, Ta_2O_5, or CdS.

7. A surface acoustic wave device according to claim 6, wherein the piezoelectric thin film is made of ZnO.

8. A surface acoustic wave device according to claim 1, wherein said interdigital electrode is located between the piezoelectric thin film and the quartz substrate.

9. A surface acoustic wave device according to claim 8, further comprising a ground electrode disposed on the piezoelectric thin film.